

What is claimed is:

1. Nucleic acid, characterised in that it codes for the non-selective cation channel  
5 OTRPC4 or for a fragment, a functional variant, an allelic variant or a subunit, or  
variants of said nucleic acid on the basis of the degenerative code or a nucleic acid  
which is able to hybridise with said nucleic acid.
2. Nucleic acid according to claim 1, characterised in that it is RNA.
- 10 3. Nucleic acid according to claim 1, characterised in that it is DNA.
4. Nucleic acid according to one of claims 1 or 3, characterised in that it contains 5' or  
3' or 5' and 3' untranslated regions.
- 15 5. Nucleic acid according to one of claims 1 to 4, characterised in that it codes for a  
fragment of the non-selective cation channel OTRPC4.
6. Nucleic acid according to one of claims 1 to 5, characterised in that it codes for a  
20 functional variant of the non-selective cation channel OTRPC4.
7. Nucleic acid according to one of claims 1 to 6, characterised in that it codes for an  
allelic variant of the non-selective cation channel OTRPC4.
- 25 8. Nucleic acid according to one of claims 1 to 7, characterised in that it codes for  
variants of nucleic acid on the basis of the degenerative code.
9. Nucleic acid, characterised in that it is capable of hybridising with a nucleic acid  
according to one of claims 1 to 8 under stringent conditions.
- 30 10. Nucleic acid according to one of claims 1 to 9, characterised in that the said  
non-selective cation channel OTRPC4 is a mammalian cation channel.

11. Nucleic acid according to one of claims 1 to 10, characterised in that the said non-selective cation channel OTRPC4 is murine.
12. Nucleic acid according to one of claims 1 to 11, characterised in that the said non-selective cation channel OTRPC4 is human.
13. Nucleic acid, characterised in that it contains the sequence

CTCTCACC GCCTACTACCAGCCGCTGGAGGGCACAAATGGCGGATTCCAGCGAAGGCCC  
 10 CCGCGCGGGGCCCGGGAGGTGGCTGAGCTCCCCGGGGATGAGAGTGGCACCCAGG  
 TGGGGAGGCTTTTCTCTCTCCTCCCTGGCCAATCTGTTTGAGGGGGAGGATGGCTCCC  
 TTTGCGCCCTCACC GGCTGATGCCAGTCGCCCTGCTGGCCCAGGCGATGGGCGACCAAA  
 TCTGCGCATGAAGTTCAGGGCGCCTTCCGCAAGGGGGTGCCCAACCCCATCGATCTG  
 CTGGAGTCCACCCTATATGAGTCCTCGGTGGTGCCTGGGCCCCAAGAAAGCACCCATGG  
 15 ACTACTGTTTGACTACGGCACCTATCGTCACCACTCCAGTGACAACAAGAGGTGGAG  
 GAAGAAGATCATAGAGAAGCAGCCGACAGGCCCAAAGCCCTGCCCTCAGCCGCC  
 CCCCATCTCAAAGTCTTCAACCGGCCTATCCTCTTTGACATCGTGTCCCGGGGTCCA  
 CTGCTGACCTGGACGGGTGCTCCCATCTTGCTGACCCACAAGAAACGCCTAACTGA  
 TGAGGAGTTTCGAGAGCCATCTACGGGGAAGACCTGCCTGCCCAAGGCCTTGCTGAAC  
 20 CTGAGCAATGGCCGAACGACACCATCCCTGTGCTGCTGGACATCGCGGAGCGCACCG  
 GCAACATGCGGGAGTTCATTAACTCGCCCTTCCGTGACATCTACTATCGAGGTCAGAC  
 AGCCCTGCACATGCCATTGAGCGTGCCTGCAAACACTACGTGGAACCTTCTCGTGGCC  
 CAGGGAGCTGATGTCCAAGCCAGGCCCGTGGGCGCTTCTTCCAGCCCAAGGATGAGG  
 GGGGTACTTCTACTTTGGGGAGCTGCCCTGTGCTGGCTGCCTGCACCAACCAGCCC  
 25 CACATTGTCAACTACCTGACGGAGAACCCCCACAAGAAGGCGGACATGCGGCGCCAG  
 GACTCGCGAGGCAACACAGTGCTGCATGCGCTGGTGGCCATTGCTGACAACACCCGTG  
 AGAACACCAAGTTTGTACCAAGATGTACGACCTGCTGCTGCTCAAGTGTGCCCGCCT  
 CTTCCCGACAGCAACCTGGAGGCCGTGCTCAACAACGACGGCCTCTCGCCCTCATG  
 ATGGCTGCCAAGACGGGCAAGATTGGGATCTTTAGCACATCATCCGGCGGGAGGTGA  
 30 CGGATGAGGACACACGGCACCTGTCCCGCAAGTTCAAGGACTGGGCCTATGGGCCAGT  
 GTATTCCTCGCTTATGACCTCTCCTCCCTGGACACGTGTGGGAAGAGGCCTCCGTGC  
 TGGAGATCCTGGTGTACAACAGCAAGATTGAGAACC GCCACGAGATGCTGGCTGTGGA  
 GCCCATCAATGAAGTCTGCGGGACAAGTGGCGCAAGTTCGGGGCCGTCTCCTTCTAC  
 ATCAACGTGGTCTCCTACCTGTGTGCCATGGTCATCTTCACTCTACCGCCTACTACCA  
 35 GCCGTGGAGGGCACACCGCGTACCCTTACCGCACCAACGCTGGACTACCTGCGGCTG

GCTGGCGAGGTCATTACGCTCTTCACTGGGGTCCTGTTCTTTCACCAACATCAAAGA  
 CTGTTCATGAAGAAATGCCCTGGAGTGAATTCTCTCTTCATTGATGGCTCCTTCCAGC  
 TGCTCTACTTCATCTACTCTGTCTGGTGATCGTCTCAGCAGCCCTCTACCTGGCAGGG  
 ATCGAGGCCCTACCTGGCCGTGATGGTCTTTGCCCTGGTCTGGGCTGGATGAATGCCCT  
 5 TTACTTCAACCGTGGGTGAAGCTGACGGGGACCTATAGCATCATGATCCAGAAGATT  
 CTCTTCAAGGACCTTTTCCGATTCTCTGCTCGTCTACTTGTCTTCATGATCGGCTACGCT  
 TCAGCCCTGGTCTCCCTCCTGAACCCGTGTGCCAACATGAAGGTGTGCAATGAGGACC  
 AGACCAACTGCACAGTGCCCACTTACCCCTCGTGCCGTGACAGCGAGACCTTCAGCAC  
 CTTCTCTCTGGACCTGTTTAAAGCTGACCATCGGCATGGGCGACCTGGAGATGCTGAGC  
 10 AGCACCAAGTACCCCGTGGTCTTCATCATCTCTGTGTGGTACCTACATCATCTCACCTT  
 TGTGCTGCTCCTCAACATGCTCATTGCCCTCATGGGCGAGACAGTGGGCCAGGTCTCCA  
 AGGAGAGCAAGCACATCTGGAAGCTGCAGTGGGCCACCACCATCCTGGACATTGAGC  
 GCTCCTTCCCGTATTCTCTGAGGAAGGCCCTCCGCTCTGGGGAGATGGTCACCGTGGGC  
 AAGAGCTCGACGGCACTCTGACCGCAGGTGGTGTCTCAGGGTGGATGAGGTGAAT  
 15 GGTCTCACTGGAACCAAGAACTTGGGCATCATCAACGAGGACCCGGGCAAGAATGAGA  
 CCTACCAGTATTATGGCTTCTCGCATACCGTGGGCCGCTCCGACAGGGATCGCTGGTCC  
 TCGGTGGTACCCCGCTGGTGGAACTGAACAAGAACTCGAACCCGACGAGGTGGTG  
 GTGCCTCTGGACAGCATGGGGAACCCCGCTGCGATGGCCACCAGCAGGGTTACCCCG  
 GCAAGTGGAGGACTGAGGACGCCCGCTCTAGGAGCTGCAGCCAGCCCCAGCTTCTC  
 20 TGCCCACTCATTCTAGTCCAGCCGATTCAGCAGTGCCTTCTGGGTGTCCCCCAC  
 ACCCTGCTTTGGCCCCAGAGGCGAGGGACCACTGGAGGTGCCAGGGAGGCCCCAGGA  
 CCCTGTGTCCCTGGCTCTGCCTCCCCACCCTGGGGTGGGGGCTCCCGGCCACCTGT  
 TTGCTCTATGGAGTCACATAAGCCAAACGCCAGAGCCCCCTCCACCTCAGGCCCCAGCC  
 CCTGCCTCTCATTATTTATTGCTCTGCTCTCAGGAAGCGACGTGACCCCTGCCCCAG  
 25 CTGGAACCTGGCAGAGGCCCTTAGGACCCCGTCCAAGTGCAGTCCCCGCCAAGCCCC  
 AGCCTCAGCTGCGCCTGAGCTGCATGCGCCACCATTTTGGCAGCGTGGCAGCTTTC  
 AAGGGGCTGGGGCCCTCGGCGTGGGGCCATGCCTTCTGTGTGTCTGTAGTGTCTGGG  
 ATTTGCCGGTGTCAATAAATGTTTATTCATTGACCGTGAAAAAAAAAAAAAAAAAAAA  
 or a partial sequence thereof, a nucleic acid which is capable of hybridising with said  
 30 sequence under stringent conditions, an allelic variant or a functional variant of said  
 sequence or a variant of nucleic acid on the basis of the degenerative code.

14. Nucleic acid, characterised in that it has the sequence

CTCTACCGCCTACTACCAGCCGCTGGAGGGCACAAATGGCGGATTCCAGCGAAGGCC  
 35 CCGCGCGGGGCCCGGGAGGTGGCTGAGCTCCCCGGGGATGAGAGTGGCACCCAGG

TGGGGAGGCTTTTCTCTCTCCTCCCTGGCCAATCTGTTTGAGGGGGAGGATGGCTCCC  
 TTTGCGCCCTACCCGGCTGATGCCAGTCGCCCTGCTGGCCCAGGCGATGGGCGACCAAA  
 TCTGCGCATGAAGTTCAGGGCGCCTTCCGCAAGGGGGTGCCCAACCCCATCGATCTG  
 CTGGAGTCCACCCTATATGAGTCCTCGGTGGTGCTGGGCCCCAAGAAAGACCCCATGG  
 5 ACTCACTGTTTGACTACGGCACCTATCGTCAACCACTCCAGTGACAACAAGAGGTGGAG  
 GAAGAAGATCATAGAGAAGCAGCCGAGAGCCCCAAAGCCCCCTGCCCTCAGCCGCC  
 CCCCATCCTCAAAGTCTTCAACCGGCTATCCTCTTTGACATCGTGTCCCGGGGTCCA  
 CTGCTGACCTGGACGGGTGCTCCCATTTCTGCTGACCCACAAGAAACGCCTAACTGA  
 TGAGGAGTTTCGAGAGCCATCTACGGGGAAGACCTGCCTGCCAAAGGCCTTGCTGAAC  
 10 CTGAGCAATGGCCGAACGACACCATCCCTGTGCTGCTGGACATCGCGGAGCGACCG  
 GCAACATGCGGGAGTTCTTAACTCGCCCTTCCGTGACATCTACTATCGAGGTGAGAC  
 AGCCCTGCACATCGCCATTGAGCGTCGCTGCAAACACTACGTGGAACITTCGTGGCC  
 CAGGGAGCTGATGTCCACGCCCAGGCCGTGGCGCTTCTTCCAGCCAAGGATGAGG  
 GGGGTACTTCTACTTTGGGGAGCTGCCCTGTGCTGGCTGCCTGCACCAACCAGCCC  
 15 CACATTGTCAACTACCTGACGGAGAACCCCCACAAGAAGGCGGACATGCGGCGCCAG  
 GACTCGCGAGGCAACACAGTGCTGCATGCGCTGGTGCCATTGTGTGACAACACCCGTG  
 AGAACACCAAGTTTGTACCAAGATGTACGACCTGCTGCTGCTCAAGTGTGCCCCGCT  
 CTTCCCGACAGCAACCTGGAGGCCGTGCTCAACAACGACGGCCTCTCGCCCTCATG  
 ATGGCTGCCAAGACGGGCAAGATTGGGATCTTTCAGCACATCATCCGGCGGAGGTGA  
 20 CGGATGAGGACACACGGCACCTGTCCGCAAGTTCAAGGACTGGGCCTATGGGCCAGT  
 GTATTCCTCGCTTATGACCTCTCCTCCCTGGACACGTGTGGGGAAGAGGCCTCCGTGC  
 TGGAGATCCTGGTGTAACAGCAAGATTGAGAACCACCACGAGATGCTGGCTGTGGA  
 GCCCATCAATGAACTGCTGCGGGACAAGTGGCGCAAGTTCGGGGCCGTCTCCTTCTAC  
 ATCAACGTGGTCTCCTACCTGTGTGCCATGGTCATCTTCACTCTACCGCCTACTACCA  
 25 GCCGTGGAGGGCACACCGCGTACCCTTACCGCACCGGTGGACTACCTGCGGTG  
 GCTGGCGAGGTCAATACGCTCTTCACTGGGGTCTGTCTTCTTCAACCAATCAAAGA  
 CTTGTTATGAAGAAATGCCCTGGAGTGAATTCTCTCTCATIGATGGCTCCTCCAGC  
 TGCTTACTTCATCTACTCTGTCTGGTGATCGTCTCAGCAGCCCTCTACCTGGCAGGG  
 ATCGAGGCCATACCTGGCCGTGATGGTCTTTGCCCTGGTCTGGGCTGGATGAATGCCCT  
 30 TTACTTCAACCGTGGGCTGAAGCTGACGGGGACCTATAGCATCATGATCCAGAAGATT  
 CTCCTCAAGGACCTTTTCCGATTCTGCTCGTCTACTTGCTCTTCATGATCGGCTACGCT  
 TCAGCCCTGGTCTCCCTCTGAACCGGTGTGCCAACATGAAGGTGTGCAATGAGGACC  
 AGACCAACTGCACAGTGGCCACTTACCCTCGTGCCGTGACAGCGAGACCTTCAGCAC  
 CTTCTCTCGACCTTTTAAAGCTGACCATCGGCATGGGCGACCTGGAGATGCTGAGC  
 35 AGCACCAAGTACCCCGTGGTCTTCATCATCTGCTGGTGACCTACATCATCTCACCTT  
 TGTGCTGCTCCTCAACATGCTCATTGCCCTCATGGGCGAGACAGTGGGCCAGGTCTCCA

AGGAGAGCAAGCACATCTGGAAGCTGCAGTGGGCCACCACCATCCTGGACATTGAGC  
GCTCCTTCCCCGATTCTCTGAGGAAGGCCTTCCGCTCTGGGGAGATGGTCACCGTGGGC  
AAGAGCTCGGACGGCACTCTGACCGCAGGTGGTGCCTCAGGGTGGATGAGGTGAAT  
GGTCTACTGGAACCAAGAACTTGGGCATCATCAACGAGGACCCGGGCAAGAATGAGA  
5 CCTACCAGTATTATGGCTTCTCGCATACCGTGGGCCCGCTCCGACGGGATCGCTGGTCC  
TCGGTGGTACCCCGCGTGGTGGAAGTGAACAAGAACTGAACCCGGACGAGGTGGTG  
GTGCCTCTGGACAGCATGGGGAACCCCGCTGCGATGGCCACGACGAGGGTTACCCCC  
GCAAGTGAGGACTGAGGACGCCCCGCTCTAGGAGACTGCAGCCAGCCCCAGCTTCTC  
TGCCCACTCATTCTAGTCCAGCCGATTTACGACAGTGCCTTCTGGGGTGTCCCCCAC  
10 ACCCTGCTTTGGCCCCAGAGGCGAGGGACAGTGGAGGTGCCAGGGAGGCCACAGGA  
CCCTGTGGTCCCTGGCTCTGCTCCCCACCTGGGGTGGGGGTCCCGGCCACCTGTC  
TTGCTCCTATGGAGTCACATAAGCCAACGCCAGAGCCCTCCACCTCAGGCCACAGCC  
CCTGCTCTCCATTATTTATTTGCTCTGCTCTCAGGAAGCGACGTGACCCCTGCCACAG  
CTGGAACCTGGCAGAGGCCTTAGGACCCCGTTCAAAGTGCAGTCCCGGCCAAGCCCC  
15 AGCCTCAGCTGCGCCTGAGCTGCATGCGCCACCATTTTGGCAGCGTGGCAGCTTTGC  
AAGGGGTGGGGCCCTCGGCGTGGGGCCATGCCTTCTGTGTCTGTAGTGTCTGGG  
ATTTGCCGGTGCTCAATAAATGTTTATTCATTGACGGTGAAAAAAAAAAAAAAAAAA  
.

20 15. Nucleic acid, characterised in that it contains the sequence  
ATGGCGATTCCAGCGAAGGCCCGCGCGGGGCCGAGGTGGCTGAGCTCCCC  
GGGGATGAGAGTGGACCCAGGTGGGGAGGCTTTCTCTCTCCTCCCTGGCCAATC  
TGTTTGAGGGGAGGATGGCTCCCTTTCGCCCTACCGGCTGATGCCAGTCGCCCTGCT  
GGCCAGGCGATGGGCGACCAATCTGCGCATGAAGTTCAGGGCGCCTTCCGCAAGG  
25 GGGTGCCCAACCCCATCGATCTGCTGGAGTCCACCTATATGAGTCTCGGTGGTGCCT  
GGGCCAAGAAAGCACCCATGGACTCACTGTTTGACTACGGCACCTATCGTCACCACT  
CCAGTGACAACAAGAGGTGGAGGAAGAAGATCATAGAAAGCAGCGCAGAGCCCCA  
AAGCCCTGCCCCCTAGCCGCCCCCATCCTCAAAGTCTTCAACCGGCTATCCTCTTT  
GACATCGTGTCCGGGGTCCACTGCTGACCTGGACGGGTGCTCCCATCTGTGTGAC  
30 CCACAAGAAACGCCTAACTGATGAGGAGTTTCGAGAGCCATCTACGGGGAAGACCTG  
CCTGCCCAAGGCCTTGCTGAACCTGAGCAATGGCCGCAACGACACCATCCCTGTGCTG  
CTGGACATCGCGGAGCGCACCGCAACATGCGGGAGTTCAATTAAGTGCCTTCCGTG  
ACATCTACTATCGAGGTGACAGACCCCTGCATCGCCATTGAGCGTCGCTGCAACA  
CTACGTGGAACCTTCTGTTGCCAGGAGCTGATGTCCAAGCCAGGCCCTGGGGCG  
35 TTCTTCCAGCCCAAGGATGAGGGGGGCTACTTCTACTTTGGGGAGCTGCCCTGTGCT  
GGCTGCCTGCACCAACGACCCACATTGTCAACTACCTGACGGAACCCCCACAAG

AAGGCGGACATGCGGCGCCAGGACTCGCGAGGCAACACAGTGCTGCATGCGCTGGTG  
 GCCATTGCTGACAACACCCGTGAGAACCAAGTTTGTTACCAAGATGTACGACCTGC  
 TGCTGCTCAAGTGTGCCCCCTCTTCCCCGACAGCAACCTGGAGGCCGTGCTCAACAA  
 CGACGGCTCTCGCCCCATGATGGCTGCCAAGACGGGCAAGATTGGGATCTTTCAG  
 5 CACATCATCCGGCGGAGGTGACGGATGAGGACACACGGCACCTGTCCCGCAAGTTCA  
 AGGATGGGCTATGGGCGAGTGATTCTCGCTTATGACCTCTCCTCCCTGGACACG  
 TGTGGGGAAGAGGCCTCCGTGCTGGAGATCCTGGTGACAAACAGCAAGATTGAGAAC  
 GCCACGAGATGCTGGCTGTGGAGCCCATCAATGAACTGCTGCGGGACAAGTGGCGCA  
 AGTTGCGGGCCGTCTCCTTCTACATCAACGTGGTCTCCTACCTGTGTGCCATGGTCATC  
 10 TTCACTCTACCGCTACTACCAGCCGTGGAGGGCACACCGCCGTACCCTTACCGCAC  
 CACGGTGGACTACCTGCGGCTGGCTGGCGAGGTCACTACGCTCTTCACTGGGGTCTGT  
 TCTTCTTACCAACATCAAAGACTTGTTCAATGAAGAAATGCCCTGGAGTGAATTCTCTC  
 TTCATTGATGGCTCCTCCAGCTGCTCTACTTCACTCTGCTCCTGGTGATCGTCTCA  
 GCAGCCCTACCTGGCAGGGATCGAGGCTACCTGGCCGTGATGGTCTTTCCTGGT  
 15 CCTGGGCTGGATGAATGCCCTTACTTCAACCCGTGGGCTGAAGCTGACGGGGACCTAT  
 AGCATCATGATCCAGAAGATTCTTCAAGGACCTTTTCCGATTCTGCTCGTCTACTT  
 GCTCTTCAATGATCGGCTACGCTTACGCCCTGGTCTCCCTCCTGAACCCGTGTGCCAACA  
 TGAAGGTGTGCAATGAGGACCAGACCACTGCACAGTGCCCACTTACCCCTCGTGCCG  
 TGACAGCGAGACCTTACGACCTTCTCTGGACCTGTTAAGCTGACCATCGGCATGG  
 20 GCGACCTGGAGATGCTGAGCAGCACCAAGTACCCCGTGGTCTTCACTCATCCTGCTGGT  
 GACCTACATCATCTCACCTTGTGCTGCTCCTCAACATGCTCATTGCCCTCATGGGCG  
 AGACAGTGGGCCAGGTCTCCAAGGAGAGCAAGCACATCTGGAAGCTGACGTGGGCCA  
 CCACCATCTGGACATTGAGCGCTCCTTCCCCGTAATCCTGAGGAAGGCCTTCCGCTCT  
 GGGGAGATGGTCACCGTGGGCAAGAGCTCGGACGGCACTCCTGACCGCAGGTGGTGC  
 25 TTCAGGTTGGATGAGGTGAACTGGTCTCACTGGAACCAAGAACTTGGGCATCATCAACG  
 AGGACCCGGGCAAGAATGAGACCTACCAGTATTATGGCTTCTCGCATACCGTGGGCCG  
 CCTCCGACGGGATCGCTGGTCTCGTGGTACCCCGCGTGGTGGAACTGAACAAGAAC  
 TCGAACCCGGACGAGGTGGTGGTGCCTTGGACAGCATGGGGAACCCCGCTGCGATG  
 GCCACCAGAGGGTTACCCCGCAAGTGGAGGACTGAGGACGCCCCGCTCTAG  
 30 or a partial sequence thereof, a nucleic acid which is capable of hybridising with said  
 sequence under stringent conditions, an allelic variant or a functional variant of said  
 sequence or a variant of nucleic acid on the basis of the degenerative code.

16. Nucleic acid, characterised in that it has the sequence

ATGGCGGATTCCAGCGAAGGCCCGCGCGGGGCCCGGGAGGTGGCTGAGCTCCCC  
 GGGGATGAGAGTGGACCCAGGTGGGGAGGCTTTTCTCTCTCTCTCCCTGGCCAATC  
 TGTTTGAGGGGAGGATGGCTCCCTTTGCGCCTACCGGCTGATGCCAGTCGCCCTGCT  
 GGCCAGGCGATGGGCGACCAAACTGCGCATGAAGTTCAGGGCGCCTTCCGAAGG  
 5 GGGTGCCCAACCCATCGATCTGCTGGAGTCCACCTATATGAGTCTCGGTGGTGCCT  
 GGGCCCAAGAAAGCACCCATGGACTACTGTTTGACTACGGCACCTATCGTACCACCT  
 CCAGTGACAACAAGAGGTGGAGGAAGAAGATCATAGAGAAGCAGCCGAGAGCCCCA  
 AAGCCCTGCCCTCAGCCGCCCCCATCTCAAAGTCTTAACCGGCTATCCTCTTT  
 GACATCGTGTCCCGGGGCTCCACTGCTGACCTGGACGGGCTGCTCCCATCTTGCTGAC  
 10 CCACAAGAAACGCCCTAACTGATGAGGAGTTTCGAGAGCCATCTACGGGGAAGACCTG  
 CCTGCCCAAGGCCTTGCTGAACCTGAGCAATGGCCGCAACGACACCATCCCTGTGCTG  
 CTGGACATCGGGAGCGCACCGGCAACATGCGGGAGTTCATTAACCTCGCCCTCCGTG  
 ACATCTACTATCGAGGTGAGACGCCCTGCACATCGCCATTGAGCGTCGCTGCAACA  
 CTACGTGGAACCTTCTCGTGGCCAGGGAGCTGATGTCCAAGCCAGGCCCGTGGGGCG  
 15 TTCTTCCAGCCAAGGATGAGGGGGGCTACTTCTACTTTGGGGAGCTGCCCTGTGCT  
 GGCTGCCTGCACCAACCAGCCCCACATTGTCAACTACCTGACGGAGAACCCCCACAAG  
 AAGGCGGACATGCGGCGCCAGGACTCGCGAGGCAACACAGTGTGATGCGTGGTG  
 GCCATTGTGACAACCCCGTGAGAACAAGTTTGTTACCAAGATGTACGACCTGC  
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 20 CGACGGCCTCTCGCCCTCATGATGGCTGCGCAAGACGGGCAAGATTGGGATCTTTCAG  
 CACATCATCCGGCGGGAGGTGACGGATGAGGACACACGGCACCTGTCCCGCAAGTCA  
 AGGACTGGGCTATGGGCCAGTGTATTCTCGCTTATGACCTCTCTCCCTGGACACG  
 TGTGGGAAGAGGCCTCCGTGCTGGAGATCTGGTGTACAACAGCAAGATTGAGAACC  
 GCCACGAGATGCTGGCTGTGGAGCCCATCAATGAACGTCTGCGGGACAAGTGGCGCA  
 25 AGTTCGGGGCGCTCTCTTCTACATCAACGTGGTCTCTACCTGTGTGCCATGGTCATC  
 TTCCTCTCACCGCTACTACCAGCGCTGGAGGGCACACCGCGTACCCCTACCGCAC  
 CACGGTGGACTACCTGCGGCTGGCTGGCGAGGTATTACGCTCTTACTGGGGTCTGT  
 TCTTCTTACCAACATCAAAGACTTGTTTCATGAAGAAATGCCCTGGAGTGAATTCTCT  
 TTCATTGATGGCTCCTTCCAGCTGCTCTACTTCATCTACTGTCTCGGTGATCGTCTCA  
 30 GCAGCCCTCTACCTGGCAGGGATCGAGGCCCTACCTGGCCGTGATGGTCTTTGCCCTGGT  
 CCTGGGCTGGATGAATGCCCTTTACTTCACCCGTGGGCTGAAGCTGACGGGGACCTAT  
 AGCATCATGATCCAGAAGATTCTTCAAGGACCTTTTCCGATTCTGTCTGCTACTACT  
 GCTCTTATGATCGGCTACGCTTACGCCCTGGTCTCCCTCTGAACCCGTGTGCCAACA  
 TGAAGGTGTGCAATGAGGACCAGACCAACTGCACAGTGCCCACTTACCCCTCGTGCCG  
 35 TGACAGCGAGACCTTACGACCTTCTCTCTGGACCTGTTAAGCTGACCATCGGCATGG  
 GCGACCTGGAGATGCTGAGCAGACCAAGTACCCCGTGGTCTTATCATCTCTGCTGGT

GACCTACATCATCCTCACCTTGTGCTGCTCCTCAACATGCTCATTGCCCTCATGGGCG  
 AGACAGTGGGCCAGGTCTCCAAGGAGAGCAAGCACATCTGGAAGTGCAGTGGGCCA  
 CCACCATCTGGACATTGAGCGCTCCTTCCCGTATTCTGAGGAAGGCCTTCCGCTCT  
 GGGGAGATGGTCACCGTGGGCAAGAGCTCGGACGGCACTCTGACCGCAGGTGGTGC  
 5 TTCAGGGTGGATGAGGTGAACTGGTCTCACTGGAACCAAGAACTTGGGCATCATCAACG  
 AGGACCCGGGCAAGAATGAGACCTACCAGTATTATGGCTTCTCGCATACCGTGGGCCG  
 CCTCCGACAGGGATCGCTGGTCTCGGTGGTACCCCGCTGGTGGAACTGAACAAGAAC  
 TCGAACC CGGACGAGGTGGTGGTGCCTCTGGACAGCATGGGGAACCCCGCTGCGATG  
 GCCACCAGCAGGGTTACCCCGCAAGTGAGGAGTCTGAGGACGCCCCGCTCTAG.

10

17. Nucleic acid, characterised in that it comprises the sequence

GGCCACGCGTCTGACTAGTACGGGGGGGGGGGGGGGGTGGCRSGGAKCAGGACTC  
 GGCCGGAGGGATCAGGAAGCGGGCGCTGCGCCCGCTCCTGAGGCTGAGAAGTAC  
 AAACAGATCTGGGTCCAGTATGGCAGATCCTGGTGTATGGTCCCCGTGCAGCGCTGGG  
 15 GAGGTGGCTGAGCCCCCTGGAGATGAGAGTGGTACCTCTGTGGGAGGCCCTCCCCC  
 TCTCTTCCCTGGCCAATCTGTTTGGGGGGAGGAAGGCTCCTCTTCTTTCCCGGTG  
 GATGCTAGCCGCCCTGCTGGCCCTGGCGATGGACGTCCAAACCTGCGTATGAAGTTC  
 AGGGCGCTTTCGCAAGGGGGTCCCAACCCCATTGACCTGTTGGAGTCCACCCGGTA  
 CGAGTCTCTAGTAGTGCTGGGCCCAAGAAAGCGCCCATGGATTCTTGTTCGACTAC  
 20 GGCACCTTACCGTCAACACCCAGTGACAACAAGAGATGGAGGAGAAAGGTCGTGGAG  
 AAGCAGCCACAGAGCCCCAAGCTCTGCAACCCAGCCACCCCATCTCAAAGTCT  
 TCAATCGGCCCATCTCTTTGACATTGTGTCCGGGGCTCCACTGCGGACCTAGATGGA  
 CTGCTCTCTTCTTGTGACCCACAAGAAGCGCTGACTGATGAGGAGTTCGGGAGC  
 CGTCCACGGGAAGACCTGCCTGCCCAAGGCGCTGCTGAACCTAAGCAACGGGCGCA  
 25 ACGACACCATCCCGGTGTTGCTGGACATTGCGGAGCGCACCGGCAACATGCGTGAATT  
 CATCAACTCGCCCTTCAGAGACATCTACTACCGAGGCCAGACATCCCTGCACATTGCC  
 ATCGAACGGCGCTGCAAGCACTACGTGGAGCTGCTGGTGGCCAGGGAGCCGACGTG  
 CACGCCACAGCCCGCGGCCGCTTCTTCCAGCCCAAGGATGAGGGAGGCTACTTCTACT  
 TTGGGGAGCTGCCCTTGCCCTGGCAGCCTGCACCAACCAGCCGACATCGTCAACTA  
 30 CCTGACAGAGAACCCTCACAAAGAAAGCTGACATGAGGCGACAGGACTCGAGGGGGAA  
 CACGGTGTGTCACGCGCTGGTGGCCATCGCCGACAACCCGAGAGAACCAAGTTT  
 GTCACCAAGATGTACGACCTGCTGCTTCTCAAGTGTTACGCTCTTCCCGACAGCAA  
 CCTGGAGACAGTTCTCAACAATGATGGCCTTTCGCTCTCATGATGGCTGCCAAGACA  
 GGCAGATCGGGGTCTTCAGACATCATCCGACGTGAGGTGACAGATGAGGACACCC  
 35 GGCATCTGTCTCGCAAGTTCAAGGACTGGGCTATGGGCTGTGTATTCTTCTCTCTAC  
 GACCTCTCTCTCTGGACACATGCGGGGAGGAGGTGTCCTGTGAGATCCTGGTGT



ACAACAGCAAGATCGAGAACC GCCATGAGATGCTGGCTGTAGAGCCCATTAAACGAAC  
 TGTGTGAGAGACAAGTGGCGTAAGTTTGGGGCTGTGTCTTCTACATCAACGTGGTCTCC  
 TATCTGTGTGCCATGGTCATCTTCACCCTACCGCCTACTATCAGCCACTGGAGGGCAC  
 GCCACCCTACCCTTACCGGACCACAGTGGACTACCTGAGGCTGGCTGGCGAGGTCATC  
 5 ACGCTCTTCACAGGAGTCTGTCTTCTTTACCAGTATCAAAGACTTGTTACGAAGAA  
 ATGCCCTGGAGTGAATTCCTCTTCGTCGATGGCTCCTTCCAGTTACTCTACTTCATCTA  
 CTCTGTGCTGGTGGTTGTCTCTGCGGCGCTCTACCTGGCTGGGATCGAGGCTTACCTGG  
 CTGTGATGGTCTTTGCCCTGGTCTGGGCTGGATGAATGCGCTGTACTTCACGCGCGGG  
 TTGAAGCTGACGGGGACCTACAGCATCATGATTCAGAAGATCCTCTTCAAAGACCTCT  
 10 TCCGCTTCTGCTTGTGTACCTGCTCTTCATGATCGGCTATGCCTCAGCCCTGGTCACCC  
 TCCTGAATCCGTGCACCAACATGAAGGTCTGTGACGAGGACCAGAGCAACTGCACGGT  
 GCCACGTATCCTGCGTGCCGCGACAGCGAGACCTTCAGCGCCTTCTCCTGGACCTCT  
 TCAAGCTCACCATCGGCATGGGAGACCTGGAGATGCTGAGCAGCGCAAGTACCCCGT  
 GGTCTTATCCTCCTGCTGGTCACCTACATCATCCTCACCTTCGTGCTCCTGTTGAACAT  
 15 GCTTATCGCCCTCATGGGTGAGACCGTGGGCCAGGTGTCCAAGGAGAGCAAGCACATC  
 TGGAAGTTGACAGTGGGCCACCACCATCCTGGACATCGAGCGTTCTTCCCTGTGTTCTT  
 GAGGAAGGCCTTCCGCTCCGAGAGATGGTGACTGTGGGCAAGAGCTCAGATGGCAC  
 TCCGGACCGCAGGTGGTGCTTCAGGGTGGACGAGGTGAACTGGTCTCACTGGAACCA  
 AACTTGGGCATCATTAAAGAGGACCTGGCAAGAGTGAAATCTACCAGTACTATGGCT  
 20 TCTCCACACCGTGGGGCGCCTTCGTAGGGATCGTTGGTCCCTCGGTGGTGCCCGCGTA  
 GTGGAGCTGAACAAGAACTCAAGCGCAGATGAAGTGGTGGTACCCCTGGATAACCTA  
 GGGAAACCCCAACTGTGACGGCCACCAGCAGGGCTACGCTCCCAAGTGGAGGACGGAC  
 GATGCCCCACTGTAGGGGCCGTGCCAGAGCTCGCACAGATAGTCCAGGCTTGGCCTTC  
 GCTCCACCTACATTTAGGCATTTGTCCGGTGTCTTCCACACCCGCATGGGACCTTGG  
 25 AGGTGAGGGCCTCTGTGGCGACTCTGTGAGGGCCCCAGGACCTCTGGTCCCCGCCAA  
 GACTTTTGCTTCAGTCTCTACTCCCACATGGGGGGGCGGGGCTCCTGGCTACCTGTCT  
 CGCTCGCTCCCATGGAGTACCTAAGCCAGCACAAAGGCCCTCTCCTCGAAAGGCTCA  
 GGCCCCATCCCTCTGTGTATTATTATTGCTCTCCTCAGGAAAATGGGGTGGCAGGAG  
 TCCACCCGCGGCTGGAACCTGGCCAGGGCTGAAGCTCATGCAGGGACGCTGCAGCTCC  
 30 GACCTGCCACAGATCTGACCTGCTGCAGCCCTGGCTAGTGTGGGTCTTCTGTACTTTGA  
 AGAGATCGGGGGCCGTGGTGCTCAATAAATGTTTATTCTCGGTGGAAAAAAAAAAAAAA  
 AA  
 AAAAAAAA

or a partial sequence thereof, a nucleic acid which is capable of hybridising with said  
 35 sequence under stringent conditions, an allelic variant or a functional variant of said

sequence or a variant of the nucleic acid on the basis of the degenerative code, wherein R may be an A or G, M may be an A or C, S may be a C or G, Y may be a C or T, K may be a G or T and W may be an A or T.

- 5 18. Nucleic acid, characterised in that it has the sequence

GGCCACGCGTCGACTAGTACGGGGGGGGGGGGGGGGTGGCRGSRGGA KCAGGACTC  
 GGCCGGAGGGATCAGGAAGCGGCGGCGCTGCGCCCGCGTCCTGAGGCTGAGAAGTAC  
 AAACAGATCTGGGTCCAGTATGGCAGATCCTGGTGTATGGTCCCCGTGCACGCGCTGGG  
 GAGGTGGCTGAGCCCCCTGGAGATGAGAGTGGTACCTCTGGTGGGGAGGCGCTTCCCCC  
 10 TCTCTTCCCTGGCCAATCTGTTTGAGGGGGAGGAAGGCTCCTCTTCTTTCCTGGTG  
 GATGCTAGCCGCGCTGCTGGCCCTGGCGATGGACGTCCAAACCTGCGTATGAAGTTC  
 AGGGCGCTTTCGCAAGGGGGTTCCCAACCCCATTTGACCTGTTGGAGTCCACCCGGTA  
 CGAGTCTCAGTAGTGCCTGGGCCAAGAAAGCGCCCATGGATTCTCTTGTTCGACTAC  
 GGCACCTACCGTCACCAACCCCACTGACAACAAGAGATGGAGGAGAAAAGGTCTGGAG  
 15 AAGCAGCCACAGAGCCCCAAAGCTCCTGCACCCAGCCACCCCATCTCTCAAAGTCT  
 TCAATCGGCCATCCTCTTTGACATTGTGTCCCGGGGCTCCACTGCGGACCTAGATGGA  
 CTGCTCTCCTTCTTGTGACCCACAAGAAGCGCCTGACTGATGAGGAGTTCGGGAGC  
 CGTCCACGGGAAGACCTGCCTGCCCAAGGCGCTGCTGAACCTAAGCAACGGGCGCA  
 ACGACACCATCCCGGTGTGTGCTGGACATTGCGGAGCGCACCGGCAACATGGTGAATT  
 20 CATCAACTCGCCCTTCAGAGACATCTACTACCGAGGCCAGACATCCCTGCACATTGCC  
 ATCGAACGGCGCTGCAAGCACTACGTGGAGCTGCTGGTGGCCAGGGAGCCGACGTG  
 CACGCCCAGGCCCCGCGCGGCTTCTTCCAGCCCAAGGATGAGGGAGGCTACTTCTACT  
 TTGGGGAGCTGCCCTTGTCCCTGGCAGCCTGCACCAACCAGCCGCACATCGTCAACTA  
 CCTGACAGAGAAACCTCACAAGAAAGCTGACATGAGGCGACAGGACTCGAGGGGGAA  
 25 CACGGTGTGCACGCGCTGGTGGCCATCGCCGACAACACCCGAGAGAAACACCAAGTTT  
 GTCACCAAGATGTACGACCTGTGCTTCTCAAGTGTACGCGCTCTTCCCCGACAGCAA  
 CCTGGAGACAGTTCTCAACAATGATGGCCTTTCGCCTCTCATGATGGCTGCCAAGACA  
 GGCAAGATCGGGGTCTTTCAGCACATCATCCGACGTGAGGTGACAGATGAGGACACCC  
 GGCATCTGTCTCGCAAGTTCAAGGACTGGGCCTATGGGCCTGTGTATCTCTCTCTAC  
 30 GACCTCTCTCTCCCTGGACACATGCGGGGAGGAGGTGTCCTGCTGGAGATCCTGGTGT  
 ACAACAGCAAGATCGAGAACCGCCATGAGATGTGCTGTAGAGCCATTAAACGAAC  
 TGTTGAGAGACAAGTGGCGTAAGTTTGGGGCTGTGTCCTTCTACATCAACGTGGTCTCC  
 TATCTGTGTGCCATGGTCATCTTACCCTCACC GCCTACTATCAGCCACTGGAGGGCAC  
 GCCACCCTACCCTTACCGGACCACAGTGGACTACCTGAGGCTGGCTGGCGAGGTCATC  
 35 ACGCTCTTCAAGGAGTCCTGTTCTTCTTTACCAGTATCAAAGACTTGTTTCACGAAGAA

ATGCCCTGGAGTGAATTCTCTCTCGTCGATGGCTCCTTCCAGTTACTCTACTTCATCTA  
 CTCTGTGCTGGTGGTGTGTCTCTGCGGCGCTCTACCTGGCTGGGATCGAGGCCTACCTGG  
 CTGTGATGGTCTTTGCCCTGGTCTGGGCTGGATGAATGCGCTGTACTTCACGCGCGGG  
 TTGAAGCTGACGGGGACCTACAGCATCATGATTGAGAAGATCCTCTTCAAAGACCTCT  
 5 TCCGCTTCTGCTTGTGTACCTGCTCTTCATGATCGGCTATGCCTCAGCCCTGGTCACCC  
 TCCTGAATCCGTGCACCAACATGAAGGTCTGTGACGAGGACCAGAGCAACTGCACGGT  
 GCCCACGTATCCTGCTGCCGACAGCGAGACCTTCAGCGCTTCTCCTCTGGACCTCT  
 TCAAGCTCACCATCGGCATGGGAGACCTGGAGATGCTGAGCAGCGCCAAGTACCCCGT  
 GGTCTTCATCCTCCTGCTGGTCACCTACATCATCCTCACCTTCGTGCTCCTGTTGAACAT  
 10 GCTTATCGCCCTCATGGGTGAGACCGTGGGCCAGGTGTCCAAGGAGAGCAAGCACATC  
 TGGAAGTTGCAGTGGGCCACACCATCCTGGACATCGAGCGTTCCTTCCTGTGTTCT  
 GAGGAAGGCCTTCGCTCCGGAGAGATGGTGACTGTGGGAAGAGCTCAGATGGCAC  
 TCCGACCGCAGGTGGTGTTCAGGGTGGACGAGGTGAACTGGTCTCACTGGAACCA  
 AACTTGGGCATCATTAAACGAGGACCCTGGCAAGAGTGAAATCTACCACTACTATGGCT  
 15 TCTCCACACCGTGGGGCGCCTTCGTAGGGATCGTTGGTCTCGGTGGTGCCCCGCGTA  
 GTGGAGCTGAACAAGAACTCAAGCGCAGATGAAGTGGTGGTACCCCTGGATAACCTA  
 GGAACCCCAACTGTGACGGCCACCAGCAGGGCTACGCTCCCAAGTGGAGGACGGAC  
 GATGCCCCACTGTAGGGGCCGTGCCAGAGCTCGCACAGATAGTCCAGGCTTGGCCTTC  
 GCTCCACCTACATTTAGGCATTTGTCCGGTGTCTTCCACACCCGCATGGGACCTTGG  
 20 AGGTGAGGGCCTCTGTGGCGACTCTGTGGAGGCCAGGACCCTCTGGTCCCCGCCAA  
 GACTTTTGCCCTCAGCTCTACTCCCAATGGGGGGGCGGGCTCCTGGCTACCTGTCT  
 CGCTCGCTCCCATGGAGTACCTAAGCCAGCACAAAGGCCCTCTCCTCGAAAGGCTCA  
 GGCCCCATCCCTCTTGTTGATTATTATTGCTCTCCTCAGGAAAATGGGGTGGCAGGAG  
 TCCACCCGCGGTGGAACCTGGCCAGGGCTGAAGCTCATGCAGGGACGCTGCAGCTCC  
 25 GACCTGCCACAGATCTGACCTGCTGCAGCCCTGGCTAGTGTGGGTCTTCTGTACTTTGA  
 AGAGATCGGGGCCGTGGTGTCTCAATAAATGTTATTCTCGGTGAAAAAAAAAAAAA  
 AA  
 AAAAAAAA,

wherein R may be an A or G, M may be an A or C, S may be a C or G, Y may be a C or T,  
 30 K may be a G or T and W may be an A or T.

19. Nucleic acid, characterised in that it contains the sequence  
 ATGGCAGATCCTGGTGATGGTCCCCGTGCAGCGCTGGGGAGGTGGCTGAGCCCCCTG  
 GAGATGAGAGTGGTACCTCTGGTGGGGAGGCCTTCCCCCTCTCTTCCTGGCCAATCTG  
 35 TTTGAGGGGGAGGAAGGCTCCTCTTCTTTCCCCGGTGGATGCTAGCCGCCCTGCTGG

30

GGAGAGATGGTGA CTGTGGCAAGAGCTCAGATGGCACTCCGACCGCAGGTGGTGC  
 TTCAGGGTGGACGAGGTGAACTGGTCTCACTGGAACCAAGAACTTGGGCATCATTAAACG  
 AGGACCCTGGCAAGAGTGAAATCTACCACTACTATGGCTTCTCCACACCGTGGGGCG  
 CCTTCGTAGGGATCGTTGGTCTCGGTGGTGGCCCGCGTAGTGGAGCTGAACAAGAAC  
 5 TCAAGCGCAGATGAAGTGGTGGTACCCCTGGATAACCTAGGGAACCCCACTGTGACG  
 GCCACCAGCAGGGGCTACGCTCCCAAGTGGAGGACGGACGATGCCCCACTGTAG  
 or a partial sequence thereof, a nucleic acid which is capable of hybridising with said  
 sequence under stringent conditions, an allelic variant or a functional variant of said  
 sequence or a variant of the nucleic acid on the basis of the degenerative code.

10

20. Nucleic acid, characterised in that it has the sequence

ATGGCAGATCCTGGTGATGGTCCCCGTGCAGCGCCTGGGGAGGTGGCTGAGCCCCCTG  
 GAGATGAGAGTGGTACCTCTGGTGGGGAGGCCTTCCCCCTCTCTCCCTGGCCAATCTG  
 TTTGAGGGGGAGGAAGGCTCCTTCTCTTTCCCGGTGGATGCTAGCCGCCTGCTGG  
 15 CCCTGGCGATGGACGTCCAAACCTGCGTATGAAGTTCAGGCGCTTTCCGCAAGGGG  
 GTTCCCAACCCCATTGACCTGTTGGAGTCCACCCGGTACGAGTCTCAGTAGTGCCTGG  
 GCCCAAGAAAGCGCCCATGGATTCTTGTTCGACTACGGCACTTACCGTCACCACCCC  
 AGTGACAACAAGAGATGGAGGAGAAAGGTCGTGGAGAAGCAGCCAAGAGCCCCAA  
 AGCTCTGCACCCAGCCACCCCCATCCTCAAAGTCTTCAATCGGCCCATCCTCTTTG  
 20 ACATTGTGTCCCGGGGCTCCACTGCGGACCTAGATGGACTGCTCTCCTTCTGTGACC  
 CACAAGAAGCGCCTGACTGATGAGGAGTCCGGGAGCCGTCCACGGGGAAGACCTGC  
 CTGCCAAGGCGCTGCTGAACCTAAGCAACGGGCGCAACGACACCATCCCGGTGTTGC  
 TGGACATTGCGGAGCGCACCGGCAACATGCGTGAATTCATCAACTCGCCCTTCAGAGA  
 CATCTACTACCGAGGCCAGACATCCCTGCACATTGCCATCGAACGGCGCTGCAAGCAC  
 25 TACGTGGAGCTGCTGTGGTGGCCAGGGAGCCGACGTGCACGCCAGGCCCGCGGCCGCT  
 TCTTCAGCCCCAAGGATGAGGGAGGCTACTTCTACTTTGGGGAGCTGCCCTTGTCCCTG  
 GCAGCTGCACCAACCAGCCGCACATCGTCAACTACCTGACAGAGAACCCTCACAAGA  
 AAGCTGACATGAGGCGACAGGACTCGAGGGGGAACACGGTGCTGCACGCGCTGGTGG  
 CCATCGCGGACAACACCCGAGAGAACCAAGTTTGTACCAAGATGTACGACCTGCT  
 30 GCTTCTCAAGTGTTCACGCTCTTCCCCGACAGCAACCTGGAGACAGTTCTCAACAATG  
 ATGGCCTTTCGCTCTCATGATGGCTGCCAAGACAGGCAAGATCGGGGTCTTTCAGCA  
 CATCATCCGACGTGAGGTGACAGATGAGGACACCCGGCATGTGTCTCGAAGTTCAG  
 GACTGGGCTATGGGCTGTGTATTCTTCTCTACGACCTCTCCTCCCTGGACACATG  
 CGGGGAGGAGGTGTCCTGCTGGAGATCCTGGTGTACAACGAAGATCGAGAACCG  
 35 CCATGAGATGCTGGCTGTAGAGCCCATTAACGAAGTGTGAGAGACAAGTGGCGTAAG

TTTGGGGCTGTGTCCTTCTACATCAACGTGGTCTCCTATCTGTGTGCCATGGTCATCTTC  
 ACCCTCACCGCCTACTATCAGCCACTGGAGGGCACGCCACCTACCCTTACCGGACCA  
 CAGTGGACTACCTGAGGCTGGCTGGCGAGGTATCAGCTCTTACAGGAGTCTGTT  
 CTTCTTTACCAGTATCAAAGACTTGTTCACGAAGAAATGCCCTGGAGTGAATTCTCTCT  
 5 TCGTCGATGGCTCCTTCCAGTTACTCTACTTCATCTACTCTGTGCTGGTGGTGTGCTCTG  
 CGGCGCTCTACCTGGCTGGGATCGAGGCCTACCTGGCTGTGATGGTCTTTGCCCTGGTC  
 CTGGGCTGGATGAATGCGCTGTACTTCACGCGCGGGTTGAAGCTGACGGGGACCTACA  
 GCATCATGATTCAAGAATCCTCTTCAAAGACCTCTTCCGCTTCCTGCTTGTGTACCTG  
 CTCTTCATGATCGGCTATGCCTCAGCCCTGGTCAACCCTCCTGAATCCGTGCACCAACAT  
 10 GAAGGTCTGTGACGAGGACCAGAGCAACTGCACGGTGCCACGTATCCTGCGTGCCGC  
 GACAGCGAGACCTTCAGCGCCTTCTCTCTGGACCTCTTCAAGCTCACCATCGGCATGG  
 GAGACCTGGAGATGCTGAGCAGCGCAAGTACCCCGTGGTCTTATCCTCTGCTGGT  
 CACCTACATCATCTCACCTTCGTGCTCCTGTTGAACATGCTTATCGCCCTCATGGGTG  
 AGACCGTGGGCCAGGTGTCCAAGGAGAGCAAGCACATCTGGAAGTTGCAGTGGGCCA  
 15 CCACCATCTGGACATCGAGCGTTCCTTCCCTGTGTTCTGAGGAAGGCCTTCCGCTCC  
 GGAGAGATGGTGACTGTGGCAAGAGCTCAGATGGCACTCCGACCGCAGGTGGTGC  
 TTCAGGTGGACGAGGTGAACTGGTCTCACTGGAACCAGAACTTGGGCATCATTAACG  
 AGGACCCTGGCAAGAGTGAAATCTACCAGTACTATGGCTTCTCCACACCGTGGGGCG  
 CCTTCGTAGGGATCGTTGGTCCTCGTGGTGCCCCGCGTAGTGGAGCTGAACAAGAAC  
 20 TCAAGCGCAGATGAAGTGGTGGTACCCCTGGATAACCTAGGGAACCCCACTGTGACG  
 GCCACCAGCAGGGCTACGCTCCCAAGTGGAGGACGACGATGCCCCACTGTAG.

21. Recombinant vector, characterised in that it contains a nucleic acid according to one of claims 1 to 20.
- 25 22. Recombinant vector according to claim 21, characterised in that it is an expression vector.
23. Host, characterised in that it contains a vector according to claim 21 or 22.
24. Host according to claim 23, characterised in that it is a eukaryotic host cell.
25. Host according to claim 23 or 24, characterised in that it is an insect cell.
- 30 26. Host according to one of claims 23 to 25, characterised in that it is an Sf9-, HEK293- or HeLa-cell.
27. Host according to claim 23, characterised in that it is a bacteriophage.
28. Host according to claim 23, characterised in that it is a prokaryotic host cell.
29. Polypeptide, characterised in that it is coded by a nucleic acid according to one of
- 35 claims 1 to 20 or a fragment, a functional variant, an allelic variant, a subunit, a

variant on the basis of the degenerative nucleic acid code, a chemical derivative thereof, a fusion protein with said polypeptide or a glycosylation variant thereof.

30. Polypeptide according to claim 29, characterised in that it is a fragment of the nonselective cation channel OTRPC4.

5 31. Polypeptide according to one of claims 29 and 30, characterised in that it is a functional variant of the nonselective cation channel OTRPC4.

32. Polypeptide according to one of claims 29 to 31, characterised in that it is an allelic variant of the nonselective cation channel OTRPC4.

33. Polypeptide according to one of claims 29 to 32, characterised in that it is a subunit  
10 of the nonselective cation channel OTRPC4.

34. Polypeptide according to one of claims 29 to 33, characterised in that it is a variant of the nonselective cation channel OTRPC4 on the basis of the degenerative nucleic acid code.

35. Polypeptide according to one of claims 29 to 34, characterised in that it is a  
15 chemical derivative of the nonselective cation channel OTRPC4.

36. Polypeptide according to one of claims 29 to 35, characterised in that it is a fusion protein consisting of the nonselective cation channel OTRPC4 and another protein.

37. Polypeptide according to one of claims 29 to 36, characterised in that it is a glycosylation variant of the nonselective cation channel OTRPC4.

20 38. Process for preparing polypeptides according to one of claims 29 to 37, characterised in that a host according to one of claims 23 to 28 is cultivated and said polypeptide is isolated.

39. Antibody protein, characterised in that it is specific for a polypeptide according to one of claims 29 to 37.

25 40. Process for preparing an antibody protein according to claim 39, characterised in that it comprises the following steps: a host selected from a eukaryotic or prokaryotic cell which contains one or more vectors having one or more nucleic acids specific for the antibody protein, is cultivated under conditions under which said antibody protein is expressed by said host cell and said antibody protein is  
30 isolated.

41. Use of a polypeptide according to one of claims 29 to 37 for finding blockers, activators or modulators of said polypeptides.

42. Use of a host according to one of claims 23 to 28 for finding blockers, activators or modulators of OTRPC4 channels.
43. Process for finding blockers, activators or modulators of OTRPC4, characterised in that a host according to one of claims 23 to 28 is incubated with a test substance.
- 5 44. Process according to claim 43, characterised in that a membrane current is measured, said membrane current is compared with a membrane current which is measured in said host after incubation with a known control substance or in the absence of the test substance.
45. Process according to one of claims 43 and 44, characterised in that said blocker is  
10 bound to a channel, said host is incubated with a test substance and the displacement of the blocker or activator bound to the channel by the test substance is measured.
46. Process according to one of claims 43 to 45, characterised in that a host according to one of claims 23 to 28 is incubated with a test substance, the intracellular  
15 quantity of a divalent cation is determined and said quantity of divalent cation is compared with the quantity of said divalent cation which is measured when said host is incubated with a known control or in the absence of the test substance.
47. Process according to one of claims 43 to 46, characterised in that said process is a high throughput screening (HTS) test or an ultrahigh throughput screening (UHTS) test.  
20
48. Activator of OTRPC4 which can be found using a process according to claims 43 to 47.
49. Blocker of OTRPC4 which can be found using a process according to claims 43 to 47.
- 25 50. Modulator of OTRPC4 which can be found using a process according to claims 43 to 47.
51. Antisense nucleic acid, characterised in that it is capable of hybridising with part of a nucleic acid according to one of claims 1 to 20 under stringent conditions.
52. Antisense nucleic acid according to claim 51, characterised in that it is a ribozyme.
- 30 53. Pharmaceutical composition, characterised in that it contains a nucleic acid according to one of claims 1 to 20 together with pharmaceutically acceptable carriers or excipients.



54. Pharmaceutical composition, characterised in that it contains an antisense nucleic acid according to one of claims 51 to 52 together with pharmaceutically acceptable carriers or excipients .
55. Pharmaceutical composition, characterised in that it contains a polypeptide  
5 according to one of claims 29 to 37 together with pharmaceutically acceptable carriers or excipients.
56. Pharmaceutical composition, characterised in that it contains a vector according to one of claims 21 to 22 together with pharmaceutically acceptable carriers or excipients.
- 10 57. Pharmaceutical composition, characterised in that it contains a host according to one of claims 23 to 28 together with pharmaceutically acceptable carriers or excipients.
58. Use of a nucleic acid according to one of claims 1 to 20 for preparing a medicament for the treatment of a disease selected from among diabetes, hyperlipidaemia,  
15 hyperproteinaemia, hypertension, stroke, renal insufficiency, shock and other pathophysiological conditions characterised by hyper- and hypoosmolarity.
59. Use of an antisense nucleic acid according to one of claims 51 to 52 for preparing a medicament for the treatment of a disease selected from among diabetes, hyperlipidaemia, hyperproteinaemia, hypertension, stroke, renal insufficiency,  
20 shock and other pathophysiological conditions characterised by hyper- and hypoosmolarity.
60. Use of a vector according to one of claims 21 to 22 for preparing a medicament for the treatment of a disease selected from among diabetes, hyperlipidaemia, hyperproteinaemia, hypertension, stroke, renal insufficiency, shock and other  
25 pathophysiological conditions characterised by hyper- and hypoosmolarity.
61. Use of a host according to one of claims 23 to 28 for preparing a medicament for the treatment of a disease selected from among diabetes, hyperlipidaemia, hyperproteinaemia, hypertension, stroke, renal insufficiency, shock and other pathophysiological conditions characterised by hyper- and hypoosmolarity.
- 30 62. Non-human mammal, characterised in that, in addition to its genome, it contains a nucleic acid according to one of claims 1 to 20 (transgene).
63. Non-human mammal, characterised in that, in its genome, a nucleic acid according to one of claims 1 to 20 is inactivated (gene knock-out).

64. Non-human mammal, characterised in that, in its genome, a nucleic acid according to one of claims 1 to 20 is modified (gene knock-in).
65. Process for producing a non-human mammal, characterised in that
- 5 a) embryonic stem cells of said non-human mammal are transfected with a vector which contains a nucleic acid according to one of claims 1 to 20 and permits recombination between the genomic DNA of said non-human mammal and the nucleic acid contained in the vector
- b) stably transfected stem cells from step a) are isolated and these are transferred into the germline of a female animal of said non-human mammal
- 10 c) the offspring of said female animal from step b) with a male animal of the same species are analysed for animals which express the polypeptide coded by the nucleic acid from step a).
66. Process for producing a non-human mammal, characterised in that
- 15 d) embryonic stem cells of said non-human mammal are transfected with a vector which contains a nucleic acid which is capable of hybridising with a nucleic acid according to one of claims 1 to 20 under stringent conditions and is inactivated by insertion of an additional nucleic acid sequence and permits recombination between the genomic DNA of said non-human mammal and the nucleic acid contained in the vector
- 20 e) stably transfected stem cells from step d) are isolated and these are transferred into the germline of a female animal of said non-human mammal
- f) the offspring of said female animal from step e) with a male animal of the same species are analysed for animals which express the polypeptide coded by the nucleic acid from step d) only slightly or not at all.
- 25 67. Process for producing a non-human mammal, characterised in that
- g) embryonic stem cells of said non-human mammal are transfected with a vector which contains a nucleic acid which is capable of hybridising with a nucleic acid according to one of claims 1 to 20 under stringent conditions and is
- 30 modified by insertion of an additional nucleic acid sequence and permits recombination between the genomic DNA of said non-human mammal and the nucleic acid contained in the vector

- h) stably transfected stem cells from step g) are isolated and these are transferred into the germline of a female animal of said non-human mammal
  - i) the offspring of said female animal from step h) with a male animal of the same species are analysed for animals which express the polypeptide coded by the nucleic acid from step g).
- 5
- 68. Use of a modulator, activator, or inhibitor of OTRPC4 for the regulation of the osmolarity of body fluids.
  - 69. Use according to claim 68, wherein the body fluid is cerebrospinal fluid, intraocular fluid, or saliva.
- 10
- 70. Pharmaceutical composition comprising a modulator, activator, or inhibitor of OTRPC4, and a pharmaceutically acceptable carrier, excipient, or diluent.